

What is claimed is:

1. A method for manufacturing a stator core (20) for an electric machine, in which strip-shaped laminations (21) are first stacked to form an essentially block-shaped lamination packet (40) that is then shaped into an annular form by means of roller bending in one of the subsequent steps and has an axial direction (a) that corresponds to a cylinder axis (z), the annular form having axial end surfaces (46), characterized in that in another of the subsequent steps, the annular lamination packet (40) is plastically deformed in the axial direction (a) at least in parts of the axial end surfaces (46).
2. The method as recited in claim 1, characterized in that axial clamping surfaces (53) are formed onto the two axial ends of the annular lamination packet (40) as a result of the plastic deformation of the end surfaces (46).
3. The method as recited in claim 1 or 2, characterized in that at the same time, the outer circumference of the annular lamination packet (40) is pressed in the radial direction and thus plastically deformed.
4. The method as recited in claim 3, characterized in that the plastic deformation of the outer circumference of the lamination packet (40) produces a radial housing fitting (54).
5. The method as recited in one of the preceding claims, characterized in that the plastic deformation simultaneously forms an insertion chamfer (55).
6. The method as recited in one of the preceding claims, characterized in that the laminations (21) have a thickness between 0.35 mm and 1 mm; a thickness of 0.5 mm is preferable, and all of the laminations (21) preferably have the same material thickness (s).

7. The method as recited in one of the preceding claims, characterized in that a number of n laminations of a lamination packet (40) are positioned in the packet in the same sequence in which they were produced in a stamping die.

5 8. The method as recited in one of the preceding claims, characterized in that before the laminations (21) are stamped out from a lamination sheet blank, its material thickness (s) is determined by means of a measuring device (M) and the desired number of laminations in the essentially block-shaped lamination packet (40) is determined based on a toleranced desired width of the essentially
10 block-shaped lamination packet (40).

9. The method as recited in one of claims 7 or 8, characterized in that the lamination packet (40) is divided into at least two partial lamination packets (58), and these are joined to form a lamination packet (40) so that at an internal
15 junction point (65), the stamping burrs (57) of adjacent laminations (21) are oriented away from each other.

10. The method as recited in one of claims 7 through 9, characterized in that the still individual laminations (21) are first cleaned and then the desired number
20 of laminations (21) are stacked to produce a gap-free lamination packet (40), precisely aligned, pressed against one another through exertion of a force, and then the laminations (21) are attached to one another by means of an attaching technique, for example welding.

25 11. The method as recited in one of the preceding claims, characterized in that the outwardly oriented stamping burrs (57) of the laminations (21) are removed.

12. The method as recited in one of the preceding claims, characterized in
30 that the roller bending occurs while the lamination packet (40) is axially prestressed at the same time.

13. The method as recited in one of the preceding claims, characterized in that the essentially block-shaped lamination packet (40) has two ends 43, which are attached to each other after the lamination packet (40) undergoes roller bending while being axially prestressed.
14. The method as recited in one of the preceding claims, characterized in that the axial shaping step reduces the axial length of the stator packet (40) by between 1% and 10% at the outer circumference.
15. The method as recited in one of the preceding claims, characterized in that half tooth welding seams (99) are provided on the tooth heads (29) of the half teeth (25) and/or on the end surfaces (43) of the half teeth (25).
16. The method as recited in one of the preceding claims, characterized in that welding seams (81, 83) are provided, which extend in the axial direction from an axial end surface (46) and only connect up to twenty laminations (21) to one another.
17. The method as recited in one of the preceding claims, characterized in that before the roller bending, a stator winding (60) is inserted into the essentially block-shaped lamination packet.
18. A stator for an electric machine, in particular a generator for motor vehicles, which has a stator yoke that is comprised of rolled strip-shaped laminations (21) and has axial end surfaces (46), characterized in that the stator yoke is plastically deformed in the axial direction (a) on its end surfaces (46).
19. A stator for an electric machine, in particular a generator for motor vehicles, which has a stator yoke that is comprised of rolled strip-shaped laminations (21) and has axial end surfaces (46), characterized in that the stator

yoke has an axial length at its inner diameter that is greater than at its outer diameter.